

Claims:

1. An apparatus for vaporizing a solid precursor, comprising:

a housing defining an interior volume having an inlet for receiving a carrier gas;

at least two surfaces contained in the housing, wherein the at least two surfaces have the solid precursor applied thereto and are spaced to allow passage of the carrier gas therebetween; and

at least one heating member contained in the housing.
2. The apparatus of claim 1, wherein the apparatus further comprises an outlet operably connected to a reaction chamber of a deposition chamber.
3. The apparatus of claim 2, wherein the at least two surfaces are selected from the group consisting of a baffle, a rod, a mesh and a grating.
4. The apparatus of claim 1, wherein the at least two surfaces have a form selected from the group consisting of an s-shape, a linear shape and a cone shape.
5. The apparatus of claim 3, wherein the at least two surfaces are formed of a material selected from the group consisting of stainless steel and ceramic.

6. The apparatus of claim 2, wherein the deposition chamber is selected from the group consisting of ALD chamber, CVD chamber, and evaporative coating chamber.
7. The apparatus of claim 6, wherein the solid precursor includes a tantalum-containing precursor or a tungsten-containing precursor.
8. An apparatus for vaporizing a solid precursor, comprising:
 - a housing defining an interior volume having an inlet for receiving a carrier gas and an outlet for delivering the carrier gas and a vaporized solid precursor, wherein the vaporized solid precursor originates from the solid precursor;
 - a first wall to support the inlet;
 - at least one surface contained in the housing for application of the solid precursor, wherein the at least one surface is located on a second wall adjoining to the first wall and the at least one surface is spaced to allow passage of the carrier gas; and
 - a heating member contained in the housing.
9. The apparatus of claim 8, wherein the outlet is operably connected to a reaction chamber of a deposition chamber.
10. The apparatus of claim 9, wherein the at least one surface is selected from the group consisting of a baffle, a rod, a mesh and a grating.
11. The apparatus of claim 8, wherein the heating member is contained within the at least one surface.

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12. The apparatus of claim 9, wherein the at least one surface has a form selected from the group consisting of an s-shape, a linear shape and a cone shape.

13. The apparatus of claim 12, wherein the at least one surface is formed of a material selected from the group consisting of stainless steel and ceramic.

14. The apparatus of claim 9, wherein the deposition chamber is selected from the group consisting of ALD chamber, CVD chamber, and evaporative coating chamber.

15. The apparatus of claim 14, wherein the solid precursor includes a tantalum-containing precursor or a tungsten-containing precursor.

16. An apparatus for vaporizing a solid precursor, comprising:

a housing defining an interior volume having an inlet for receiving a carrier gas and an outlet for delivering the carrier gas and a vaporized solid precursor, wherein the vaporized solid precursor originates from the solid precursor;

at least two surfaces contained in the housing, wherein the at least two surfaces have the solid precursor applied thereto and are spaced to allow passage of the carrier gas therebetween; and

at least one heating member contained in at least one wall of the housing.

17. The apparatus of claim 16, wherein the at least two surfaces is selected from the group consisting of a baffle, a rod, a mesh and a grating.

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18. The apparatus of claim 16, wherein the outlet is operably connected to a reaction chamber of a deposition chamber.

19. The apparatus of claim 18, wherein the deposition chamber is selected from the group consisting of ALD chamber, CVD chamber, and evaporative coating chamber.

20. The apparatus of claim 19, wherein the solid precursor includes a tantalum-containing precursor or a tungsten-containing precursor.